

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application : 09/666,630  
Applicant(s) : KURAPATI, Kaushal  
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**Title: TELEVISION PROGRAM RECOMMENDER WITH AUTOMATIC  
IDENTIFICATION OF CHANGING VIEWER PREFERENCES**

Mail Stop: APPEAL BRIEF - PATENTS  
Commissioner for Patents  
Alexandria, VA 22313-1450

**APPEAL UNDER 37 CFR 41.37**

Sir:

This is an appeal from the decision of the Examiner dated 6 September 2006, finally rejecting claims 1-7, 9-12, 14-22, 24-27, and 29-32 of the subject application.

This paper includes (each beginning on a separate sheet):

1. Appeal Brief;
2. Claims Appendix;
3. Evidence Appendix; and
4. Related Proceedings Appendix.

## **APPEAL BRIEF**

### **I. REAL PARTY IN INTEREST**

The above-identified application is assigned, in its entirety, to **Koninklijke Philips Electronics N. V.**

### **II. RELATED APPEALS AND INTERFERENCES**

Appellant is not aware of any co-pending appeal or interference that will directly affect, or be directly affected by, or have any bearing on, the Board's decision in the pending appeal.

### **III. STATUS OF CLAIMS**

Claims 1-32 are pending in the application.

Claims 8, 13, 23, and 28 would be allowed if rewritten in independent form.

Claims 1-7, 9-12, 14-22, 24-27, and 29-32 stand rejected by the Examiner under 35 U.S.C. 103(a).

These rejected claims are the subject of this appeal.

### **IV. STATUS OF AMENDMENTS**

No amendments were filed subsequent to the final rejection in the Office Action dated 6 September 2006.

### **V. SUMMARY OF CLAIMED SUBJECT MATTER**

The invention addresses a television program recommendation system and method, and particularly, the management and organization of time-dependent viewer preferences. It is well recognized that viewer preferences may vary by time-of-day, day-of-week, season-of-year, and so on, and systems that provide recommendations based on viewer preferences should be cognizant of these dependencies (Applicant's page 6, line 27 – page 7, line 4). Different viewers, however, may have different time-dependencies, and this invention provides

techniques for determining an individual viewer's time-dependent preferences, based on the viewer's viewing history (page 6, lines 11-26).

As time progresses, a viewer's history is continually changing; yet changes in viewing history do not necessarily imply changes of the viewer's preferences. This invention provides techniques for determining how a viewer's preferences change with time based on a potentially dynamically changing viewing history. The applicant teaches (FIG. 4) creating two subsets of the viewer's history and providing each of these subsets to a recommendation system to obtain two sets of recommendations based on these histories (page 4, lines 13-20). If the recommendations from the two different sets of history are similar, the implication is that the viewer's preferences have not changed, even though the particular shows that were viewed differed. If, on the other hand, the recommendations from the two different sets of history are dissimilar, the implication is that the viewer's preferences were different for each of these sets (page 4, lines 21-28). By identifying distinguishable changes in the viewer's preferences based on different sets of viewing history, time-dependencies, and other dependencies, can be identified (page 3, lines 25-29). Additionally, if two sets of histories provide the same set of recommendations, one of the sets can be considered redundant, and deleted without impact (page 4, lines 5-10).

Independent claim 1 recites a method (FIG. 4) for identifying changes in television viewing preferences of an individual, comprising the steps of:

- obtaining a viewing history indicating a set of programs that have been watched by a user;

- establishing at least two viewing history sub-sets,  $VH_i$  and  $VH_k$ , from said viewing history (420; page 10, lines 11-12);

- generating a corresponding set of program recommendation scores,  $S_i$  and  $S_k$ , for a set of programs in a given time interval based on said at least two viewing history sub-sets,  $VH_i$  and  $VH_k$  (430-440; page 10, lines 13-18), and

comparing said sets of program recommendation scores,  $S_i$  and  $S_k$  based on respective viewing history sub-sets (450), to identify a change in said viewer preferences (470; page 10, lines 25-29).

Independent claim 11 recites a method (FIG. 4) for managing the storage of a viewer history in a television program recommender, comprising the steps of:

- obtaining a viewing history indicating a set of programs that have been watched by a user;

- establishing at least two viewing history sub-sets,  $VH_i$  and  $VH_k$ , from said viewing history (420; page 10, lines 11-12);

- generating viewer profiles,  $P_i$  and  $P_k$ , corresponding to said at least two sub-sets,  $VH_i$  and  $VH_k$  (430; page 10, lines 13-14);

- generating a corresponding set of program recommendation scores,  $S_i$  and  $S_k$ , for a set of programs in a given time interval based on said viewer profiles,  $P_i$  and  $P_k$  (440; page 10, lines 15-18);

- comparing said sets of program recommendation scores,  $S_i$  and  $S_k$ , to identify a change in said viewer preferences (450; page 10, lines 18-20); and

- deleting a portion of said viewing history if said sets of program recommendation scores,  $S_i$  and  $S_k$  are substantially similar (460; 10, lines 20-24).

Independent claim 16 recites a system for identifying changes in television viewing preferences of an individual, comprising:

- a memory for storing computer readable code; and

- a processor (100 of FIG. 1) operatively coupled to said memory, said processor configured to:

- obtain a viewing history (200 of FIG. 1) indicating a set of programs that have been watched by a user (page 7, lines 12-19);

- establish at least two viewing history sub-sets,  $VH_i$  and  $VH_k$ , from said viewing history (FIG. 2; page 8, lines 10-25);

generate a corresponding set of program recommendation scores,  $S_i$  and  $S_k$ , for a set of programs in a given time interval based on said at least two viewing history sub-sets,  $VH_i$  and  $VH_k$  (FIG. 2; page 8, lines 26-33); and

compare said sets of program recommendation scores,  $S_i$  and  $S_k$  based on respective viewing history sub-sets, to identify a change in said viewer preferences (page 9, lines 1-18).

Independent claim 26 recites a system for managing the storage of a viewer history in a television program recommender, comprising:

a memory for storing computer readable code; and

a processor (100 of FIG. 1) operatively coupled to said memory, said processor configured to:

obtain a viewing history (200 of FIG. 1) indicating a set of programs that have been watched by a user (page 7, lines 12-19);

establish at least two viewing history sub-sets,  $VH_i$  and  $VH_k$ , from said viewing history (FIG. 2; page 8, lines 10-25);

generate viewer profiles,  $P_i$  and  $P_k$ , corresponding to said at least two viewing history sub-sets,  $VH_i$  and  $VH_k$  (FIG. 2; page 8, lines 26-33);

generate a corresponding set of program recommendation scores,  $S_i$  and  $S_k$ , for a set of programs in a given time interval based on said viewer profiles,  $P_i$  and  $P_k$  (FIG. 2; page 8, lines 26-33);

compare said sets of program recommendation scores,  $S_i$  and  $S_k$ , to identify a change in said viewer preferences (page 9, lines 1-3); and

delete a portion of said viewing history if said sets of program recommendation scores,  $S_i$  and  $S_k$  are substantially similar (page 9, lines 3-8).

Independent claim 31 recites an article of manufacture for identifying changes in television viewing preferences of an individual, comprising:

a computer readable medium having computer readable code means embodied thereon, said computer readable program code means comprising (FIG. 4):

a step to obtain a viewing history indicating a set of programs that have been watched by a user (200 of FIG. 1);

a step to establish at least two viewing history sub-sets,  $VH_i$  and  $VH_k$ , from said viewing history (420; page 10, lines 11-14);

a step to generate a corresponding set of program recommendation scores,  $S_i$  and  $S_k$ , for a set of programs in a given time interval based on said at least two viewing history sub-sets,  $VH_i$  and  $VH_k$  (430-440; page 10, lines 15-18); and

a step to compare said sets of program recommendation scores,  $S_i$  and  $S_k$  based on respective viewing history sub-sets, to identify a change in said viewer preferences (450; page 10, lines 18-27).

Independent claim 32 recites an article of manufacture for managing the storage of a viewer history in a television program recommender, comprising:

a computer readable medium having computer readable code means embodied thereon, said computer readable program code means comprising:

a step to obtain a viewing history indicating a set of programs that have been watched by a user (200 of FIG. 1);

a step to establish at least two viewing history sub-sets,  $VH_i$  and  $VH_k$ , from said viewing history (420; page 10, lines 11-14);

a step to generate viewer profiles,  $P_i$  and  $P_k$ , corresponding to said at least two viewing history sub-sets,  $VH_i$  and  $VH_k$  (430; page 10, lines 11-14);

a step to generate a corresponding set of program recommendation scores,  $S_i$  and  $S_k$ , for a set of programs in a given time interval based on said viewer profiles,  $P_i$  and  $P_k$  (440; page 10, lines 15-18);

a step to compare said sets of program recommendation scores,  $S_1$  and  $S_K$ , to identify a change in said viewer preferences (450, page 10, lines 18-20); and

a step to delete a portion of said viewing history if said sets of program recommendation scores,  $S_1$  and  $S_K$  are substantially similar (460, page 10, lines 20-24).

#### VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-7, 9-12, 14-22, 24-27, and 29-32 stand rejected under 35 U.S.C. 103(a) over Bedard (USP 5,801,747) and Herz et al. (USP 6,088,722, hereinafter Herz).

#### VII. ARGUMENT

**Claims 1-7, 9-12, 14-22, 24-27, and 29-32 stand rejected  
under 35 U.S.C. 103(a) over Bedard and Herz.**

MPEP 2142 states:

"To establish a *prima facie* case of obviousness ... the prior art reference (or references when combined) *must teach or suggest all the claim limitations*... If the examiner does not produce a *prima facie* case, the applicant is under no obligation to submit evidence of nonobviousness."

#### **Claims 1-7 and 9-10**

Claim 1, upon which claims 2-10 depend, claims a method that includes establishing history sub-sets from a viewing history, generating a corresponding set of program recommendation scores for a set of programs in a given time interval based on the history sub-sets, and comparing the sets of program recommendation scores to identify a change in viewer preferences.

Neither Bedard or Herz teaches or suggests generating sets of program recommendation scores for a set of programs in a given time interval based on

history sub-sets, and neither Bedard or Herz teaches or suggests comparing the sets of program recommendation scores to identify a change in viewer preferences.

The Office action asserts that Bedard teaches determining a change in viewer preferences based on two history sub-sets "by comparing recent selections (subset 2) to old selections (subset 1) to determine if the profile should be updated using weighted techniques (Bedard 6:33-63) wherein an update in the profile corresponds to the identification of a change in viewer preferences, since it is inherent that an update would not be necessary unless a viewer's preferences have changed" (Office action, page 6, lines 15-18). The applicant respectfully notes, however, that the Office action's rationale is contrary to the applicant's claimed invention.

The applicant claims a method for determining whether a user's preferences have changed based on whether two sets of viewing history cause different program recommendations, whereas the Office action presumes that the user's preferences have changed whenever the viewing history changes. The Office action's rationale obviates the need for any of the elements in the applicant's claimed method beyond defining two sub-sets, and, most significantly, the Office action's assertion fails to address the specific elements applicant's claimed method beyond defining two history sub-sets.

As the Office action describes, Bedard teaches a technique for updating a user's viewing history in an ordered manner based on the amount of time a user spends viewing each selection. Bedard's history includes a list of channels and Bedard's process continually updates the amount of time each channel is viewed; a new channel is added to the list by removing an older channel with less viewing time. The Office action defines the new channel as one history subset, and the older channels as another history subset. The Office action presumes that the viewing history is identical to the user's preferences, and therefore a change to the viewing history necessarily implies a change of the user's preferences.

As noted above, given this presumption that the viewing history and the user's preferences are one in the same element, there is no need in Bedard to generate sets of program recommendations based on different sets of histories, nor to



compare these sets of recommendations to determine whether the user's preferences have changed. The Office action asserts that the claimed generation of recommendation scores and comparing the scores to determine whether a change has occurred "is met by the comparison of a new entry (viewing history subset 2) to existing viewer profile array entries (viewing history subset 1) to determine if the profile should be updated (Bedard 6:33-63) wherein an update in the profile corresponds to the identification of a change in viewer preferences, since an update would not be necessary unless a viewer's preferences have changed". The applicant respectfully maintains that this circular reasoning (the preferences/history have changed because the history/preferences have changed) fails to establish that Bedard teaches any of the claim limitations beyond the fact that Bedard's new selection and older selections can be defined as two different history subsets.

The Office action relies upon Herz for teaching user preferences that vary with time. The applicant concurs with this characterization of Herz, but respectfully maintains that the combination of Herz and Bedard would not result in the applicant's claimed invention, because neither Herz nor Bedard teach or suggest generating sets of program recommendation scores for a set of programs in a given time interval based on history sub-sets, and neither Bedard or Herz teaches or suggests comparing the sets of program recommendation scores to identify a change in a viewer preferences.

The Board of Patent Appeals and Interferences has consistently upheld the principle that the burden of establishing a *prima facie* case resides with the Office, and to meet this burden, the Examiner must specifically identify where each of the claimed elements are found in the prior art (see, for example, *Ex Parte Naoya Isoda*, Appeal No. 2005-2289, Application 10/064,508 (BPAI Opinion October 2005)). The Office action has failed to identify where the claimed limitation of generating a corresponding set of program recommendation scores for a set of programs in a given time interval based on at least two viewing history sub-sets can be found in either Bedard or Herz, has failed to identify where the claimed limitation of comparing

sets of program recommendation scores to identify a change in viewer preferences, and thus has failed to establish a prima facie case.

Because the combination of Bedard and Herz fails to teach or suggest each of the limitations of claim 1, and the Office action fails to identify where Bedard or Herz provides these teachings, the applicant respectfully maintains that the rejection of claims 1-7 and 9-10 under 35 U.S.C. 103(a) over Bedard and Herz is unfounded, per MPEP 2142.

#### **Claims 11-12 and 14-15**

Claim 11, upon which claims 12-15 depend, claims a method that includes generating viewer profiles corresponding to history sub-sets, generating a corresponding set of program recommendation scores for a set of programs in a given time interval based on the viewer profiles, comparing the sets of program recommendation scores to identify a change in viewer preferences, and deleting a portion of the viewing history if the sets of program recommendation scores are substantially similar.

As noted above, the combination of Bedard and Herz fails to teach or suggest generating a corresponding set of program recommendation scores for a set of programs in a given time interval based on viewer profiles, and fails to teach or suggest comparing sets of program recommendation scores to identify a change in viewer preferences, and the Office action fails to identify where either Bedard or Herz provides these teachings.

Further, neither Bedard nor Herz teaches deleting a portion of the viewing history if sets of program recommendation scores are substantially similar. The Office action asserts that Bedard provides this teaching at column 5, lines 44-48 and 59-60. At the cited text, Bedard merely teaches that older selections may be replaced by newer selections. As noted above, Bedard teaches deleting an older selection based on the viewing time associated with the selection; the viewing times of each older selection is decremented until one of the older selection's viewing time is decremented to zero (318 in Bedard's loop 316-324). Bedard's deletion criteria is

completely independent of a similarity of program recommendation scores. Even assuming in argument that Bedard's viewing times correspond to the claimed recommendation scores, Bedard teaches deleting the selection when the viewing time is decremented to zero, independent of whether this viewing time is similar to any other selection's viewing time.

Because the combination of Bedard and Herz fails to teach or suggest generating sets of program recommendation scores for a set of programs in a given time interval based on viewer profiles, fails to teach or suggest comparing the sets of program recommendation scores to identify a change in viewer preferences, and fails to teach deleting a portion of a viewing history if the sets of program recommendation scores are substantially similar, the applicant respectfully maintains that the rejection of claims 11-12 and 14-15 under 35 U.S.C. 103(a) over Bedard and Herz is unfounded, per MPEP 2142.

#### **Claims 16-22 and 24-25**

Claim 16, upon which claims 17-25 depend, claims a system that includes a processor that is configured to generate a corresponding set of program recommendation scores for a set of programs in a given time interval based on at least two viewing history sub-sets, and compare the sets of program recommendation scores to identify a change in viewer preferences.

As noted above with regard to claim 1, the combination of Bedard and Herz fails to teach or suggest generating a corresponding set of program recommendation scores for a set of programs in a given time interval based on at least two viewing history sub-sets, and fails to teach or suggest comparing the sets of program recommendation scores to identify a change in viewer preferences. As such, the applicant respectfully maintains that the rejection of claims 16-22 and 24-25 under 35 U.S.C. 103(a) over Bedard and Herz is unfounded, per MPEP 2142.

### **Claims 26-27 and 29-30**

Claim 26, upon which claims 27-30 depend, claims a system that includes a processor that is configured to generate viewer profiles corresponding to at least two viewing history sub-sets, generate a corresponding set of program recommendation scores for a set of programs based on the viewer profiles, compare the sets of program recommendation scores to identify a change in viewer preferences, and delete a portion of the viewing history if the sets of program recommendation scores are substantially similar.

As discussed above with regard to claim 11, the combination of Bedard and Herz fails to teach or suggest generating sets of program recommendation scores for a set of programs based on viewer profiles, fails to teach or suggest comparing sets of program recommendation scores to identify a change in viewer preferences, and fails to teach or suggest deleting a portion of the viewing history if the sets of program recommendation scores are substantially similar. As such, the applicant respectfully maintains that the rejection of claims 26-27 and 29-30 under 35 U.S.C. 103(a) over Bedard and Herz is unfounded, per MPEP 2142.

### **Claim 31**

Claim 31 claims an article of manufacture that includes computer readable program code that is configured to generate sets of program recommendation scores for a set of programs based on at least two history sub-sets and compare the sets of program recommendation scores to identify a change in viewer preferences.

As discussed above with regard to claim 1, the combination of Bedard and Herz fails to teach or suggest generating sets of program recommendation scores for a set of programs based on at least two history sub-sets, and fails to teach or suggest comparing sets of program recommendation scores to identify a change in viewer preferences. As such, the applicant respectfully maintains that the rejection of claim 31 under 35 U.S.C. 103(a) over Bedard and Herz is unfounded, per MPEP 2142.

### Claim 32

Claim 32 claims an article of manufacture that includes computer readable program code that is configured to generate sets of program recommendation scores for a set of programs based on viewer profiles, compare the sets of program recommendation scores to identify a change in viewer preferences, and delete a portion of a viewing history if the sets of program recommendation scores are substantially similar.

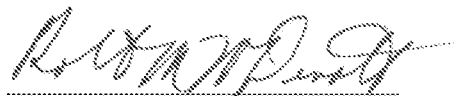
As discussed above with regard to claim 11, the combination of Bedard and Herz fails to teach or suggest generating sets of program recommendation scores for a set of programs based on viewer profiles, fails to teach or suggest comparing sets of program recommendation scores to identify a change in viewer preferences, and fails to teach or suggest deleting a portion of a viewing history if sets of program recommendation scores are substantially similar. As such, the applicant respectfully maintains that the rejection of claim 32 under 35 U.S.C. 103(a) over Bedard and Herz is unfounded, per MPEP 2142.

## CONCLUSIONS

Because the combination of Bedard and Herz fails to teach or suggest generating sets of program recommendation scores for a set of programs based on viewer profiles, and fails to teach or suggest comparing sets of program recommendation scores to identify a change in viewer preferences, the applicant respectfully requests that the Examiner's rejection of claims 1-7, 9-12, 14-22, 24-27, and 29-32 under 35 U.S.C. 103(a) over Bedard and Herz be reversed by the Board, and the claims be allowed to pass to issue.

Because the combination of Bedard and Herz fails to teach or suggest deleting a portion of a viewing history if sets of program recommendation scores are substantially similar, the applicant respectfully requests that the Examiner's rejection of claims 11-12, 14-15, 26-27, 29-30, and 32 under 35 U.S.C. 103(a) over Bedard and Herz be reversed by the Board, and the claims be allowed to pass to issue.

Respectfully submitted



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## CLAIMS APPENDIX

1. A method for identifying changes in television viewing preferences of an individual, comprising the steps of:

obtaining a viewing history indicating a set of programs that have been watched by a user;

establishing at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ , from said viewing history;

generating a corresponding set of program recommendation scores,  $S_1$  and  $S_K$ , for a set of programs in a given time interval based on said at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ ; and

comparing said sets of program recommendation scores,  $S_1$  and  $S_K$  based on respective viewing history sub-sets, to identify a change in said viewer preferences.

2. The method of claim 1, wherein said comparing step further comprises the step of comparing the top-N (where N is a positive integer) recommended television programs in each set,  $S_1$  and  $S_K$ .

3. The method of claim 1, further comprising the step of generating viewer profiles,  $P_1$  and  $P_K$ , corresponding to said at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ .

4. The method of claim 1, further comprising the step of presenting a user with a set of recommended programs based on one or both of said sets of programs,  $S_1$  and  $S_K$ .

5. The method of claim 1, further comprising the step of presenting a user with a union set of recommended programs based on said sets of programs,  $S_1$  and  $S_K$ .

6. The method of claim 1, further comprising the step of presenting a user with an intersection set of recommended programs based on said sets of programs,  $S_1$  and  $S_K$ .

7. The method of claim 1, further comprising the step of presenting a user with a set of recommended programs,  $S_K$ , based on a more recent sub-set of said viewing history.

8. The method of claim 1, wherein said at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ , from said viewing history are obtained by uniformly randomly sampling sub-sets of television programs from said viewing history.

9. The method of claim 1, wherein said at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ , from said viewing history are obtained by selecting a time span that is less than the entire time period covered by the viewing history.

10. The method of claim 9, wherein said selected time span is an earlier similar time period to a given time interval.



11. A method for managing the storage of a viewer history in a television program recommender, comprising the steps of:

obtaining a viewing history indicating a set of programs that have been watched by a user;

establishing at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ , from said viewing history;

generating viewer profiles,  $P_1$  and  $P_K$ , corresponding to said at least two sub-sets,  $VH_1$  and  $VH_K$ ;

generating a corresponding set of program recommendation scores,  $S_1$  and  $S_K$ , for a set of programs in a given time interval based on said viewer profiles,  $P_1$  and  $P_K$ ;

comparing said sets of program recommendation scores,  $S_1$  and  $S_K$ , to identify a change in said viewer preferences; and

deleting a portion of said viewing history if said sets of program recommendation scores,  $S_1$  and  $S_K$ , are substantially similar.

12. The method of claim 11, wherein said comparing step further comprises the step of comparing the top-N (where N is a positive integer) recommended television programs in each set,  $S_1$  and  $S_K$ .

13. The method of claim 11, wherein said at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ , from said viewing history are obtained by uniformly randomly sampling sub-sets of television programs from said viewing history.

14. The method of claim 11, wherein said at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ , from said viewing history are obtained by selecting a time span that is less than the entire time period covered by the viewing history.

15. The method of claim 14, wherein said selected time span is an earlier similar time period to a given time interval.

16. A system for identifying changes in television viewing preferences of an individual, comprising:

- a memory for storing computer readable code; and
- a processor operatively coupled to said memory, said processor configured to:
  - obtain a viewing history indicating a set of programs that have been watched by a user;
  - establish at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ , from said viewing history;
  - generate a corresponding set of program recommendation scores,  $S_1$  and  $S_K$ , for a set of programs in a given time interval based on said at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ ; and
  - compare said sets of program recommendation scores,  $S_1$  and  $S_K$  based on respective viewing history sub-sets, to identify a change in said viewer preferences.

17. The system of claim 16, wherein said processor compares the top-N (where N is a positive integer) recommended television programs in each set,  $S_1$  and  $S_K$ .

18. The system of claim 16, wherein said processor is further configured to generate viewer profiles,  $P_1$  and  $P_K$ , corresponding to said at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ .

19. The system of claim 16, wherein said processor is further configured to present a user with a set of recommended programs based on one or both of said sets of programs,  $S_1$  and  $S_K$ .

20. The system of claim 16, wherein said processor is further configured to present a user with a union set of recommended programs based on said sets of programs,  $S_1$  and  $S_K$ .

21. The system of claim 16, wherein said processor is further configured to present a user with an intersection set of recommended programs based on said sets of programs,  $S_j$  and  $S_k$ .

22. The system of claim 16, wherein said processor is further configured to present a user with a set of recommended programs,  $S_k$ , based on a more recent sub-set of said viewing history.

23. The system of claim 16, wherein said at least two viewing history sub-sets,  $VH_j$  and  $VH_k$ , from said viewing history are obtained by uniformly randomly sampling sub-sets of television programs from said viewing history.

24. The system of claim 16, wherein said at least two viewing history sub-sets,  $VH_j$  and  $VH_k$ , from said viewing history are obtained by selecting a time span that is less than the entire time period covered by the viewing history.

25. The system of claim 24, wherein said selected time span is an earlier similar time period to a given time interval.

26. A system for managing the storage of a viewer history in a television program recommender, comprising:

- a memory for storing computer readable code; and
- a processor operatively coupled to said memory, said processor configured to:
  - obtain a viewing history indicating a set of programs that have been watched by a user;
  - establish at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ , from said viewing history;
  - generate viewer profiles,  $P_1$  and  $P_K$ , corresponding to said at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ ;
  - generate a corresponding set of program recommendation scores,  $S_1$  and  $S_K$ , for a set of programs in a given time interval based on said viewer profiles,  $P_1$  and  $P_K$ ;
  - compare said sets of program recommendation scores,  $S_1$  and  $S_K$ , to identify a change in said viewer preferences; and
  - delete a portion of said viewing history if said sets of program recommendation scores,  $S_1$  and  $S_K$  are substantially similar.

27. The system of claim 26, wherein said processor compares the top-N (where N is a positive integer) recommended television programs in each set,  $S_1$  and  $S_K$ .

28. The system of claim 26, wherein said at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ , from said viewing history are obtained by uniformly randomly sampling sub-sets of television programs from said viewing history.

29. The system of claim 26, wherein said at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ , from said viewing history are obtained by selecting a time span that is less than the entire time period covered by the viewing history.

30. The system of claim 29, wherein said selected time span is an earlier similar time period to a given time interval.

31. An article of manufacture for identifying changes in television viewing preferences of an individual, comprising:

    a computer readable medium having computer readable code means embodied thereon, said computer readable program code means comprising:

        a step to obtain a viewing history indicating a set of programs that have been watched by a user;

        a step to establish at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ , from said viewing history;

        a step to generate a corresponding set of program recommendation scores,  $S_1$  and  $S_K$ , for a set of programs in a given time interval based on said at least two viewing history sub-sets,  $VH_1$  and  $VH_K$ ; and

        a step to compare said sets of program recommendation scores,  $S_1$  and  $S_K$  based on respective viewing history sub-sets, to identify a change in said viewer preferences.

32. An article of manufacture for managing the storage of a viewer history in a television program recommender, comprising:

a computer readable medium having computer readable code means embodied thereon, said computer readable program code means comprising:

a step to obtain a viewing history indicating a set of programs that have been watched by a user;

a step to establish at least two viewing history sub-sets,  $VH_i$  and  $VH_K$ , from said viewing history;

a step to generate viewer profiles,  $P_i$  and  $P_K$ , corresponding to said at least two viewing history sub-sets,  $VH_i$  and  $VH_K$ ;

a step to generate a corresponding set of program recommendation scores,  $S_i$  and  $S_K$ , for a set of programs in a given time interval based on said viewer profiles,  $P_i$  and  $P_K$ ;

a step to compare said sets of program recommendation scores,  $S_i$  and  $S_K$  to identify a change in said viewer preferences; and

a step to delete a portion of said viewing history if said sets of program recommendation scores,  $S_i$  and  $S_K$  are substantially similar.

## EVIDENCE APPENDIX

No evidence has been submitted that is relied upon by the appellant in this appeal.

## RELATED PROCEEDINGS APPENDIX

Appellant is not aware of any co-pending appeal or interference which will directly affect or be directly affected by or have any bearing on the Board's decision in the pending appeal.